

**What is claimed is:**

- 1           1. A viscous fluid type heat generating apparatus comprising:  
2            housing means;  
3            channel means in said housing means for guiding a tempering fluid  
4            through them;  
5            conveying rotor means arranged at least partially in said channel means  
6            for driving said tempering fluid through said channel means, said conveying rotor  
7            means being hollow to form a chamber at least partially surrounded by a rotor  
8            wall of said conveyor rotor means for containing said viscous fluid;  
9            drive means for rotating said conveying rotor means  
10           shaft means driven by said drive means and being connected to said  
11           conveying rotor means; and  
12           shearing means in said chamber of said hollow conveying rotor means for  
13           generating heat by shearing said viscous fluid, said heat being transferred via said  
14           conveying rotor means to said tempering fluid in said channel means.
- 1           2. Apparatus as claimed in claim 1, wherein said chamber is  
2           fully surrounded by said rotor wall means at least in operation.
- 1           3. Apparatus as claimed in claim 1, wherein said shearing  
2           means comprise at least two opposing shearing parts, said shearing parts  
3           including interengaging projections and recesses.
- 1           4. Apparatus as claimed in claim 1, wherein said chamber is  
2           formed as a gap at least in part.
- 1           5. Apparatus as claimed in claim 1, wherein said conveying  
2           rotor means are formed of a metal having a higher thermal conductivity  $k$  than  
3           100 kcal/m h degree.
- 1           6. Apparatus as claimed in claim 5, wherein said conveying  
2           rotor means are formed of aluminum.
- 1           7. A viscous fluid type heat generating apparatus comprising:  
2            housing means;

3 channel means in said housing means for guiding a tempering fluid  
4 through them;

5           conveying rotor means arranged at least partially in said channel means  
6 for driving said tempering fluid through said channel means, said conveying  
7 rotor means being hollow to form a chamber at least partially surrounded by a  
8 rotor wall of said conveyor rotor means for containing said viscous fluid;

9 . drive means for rotating said conveying rotor means;

12           shearing means in said chamber of said hollow conveying rotor means  
13    for generating heat by shearing said viscous fluid, said heat being transferred  
14    via said conveying rotor means to said tempering fluid in said channel means,  
15    said shearing means including

16 at least one shearing plate element for cooperating with said rotor wall,  
17 and

means providing relative movement of said shearing plate in relation to  
said rotor wall.

1                           9. Apparatus as claimed in claim 8, wherein said holding  
2 means are formed as a shaft which extends along said inner space.

1                   10. A viscous fluid type heat generating apparatus comprising:  
2                   housing means;

3 channel means in said housing means for guiding a tempering fluid  
4 through them;

5 conveying rotor means arranged at least partially in said channel  
6 means for driving said tempering fluid through said channel means, said  
7 conveying rotor means being hollow to form a chamber at least partially

8       surrounded by a rotor wall of said conveying rotor means for containing said  
9       viscous fluid;

10            drive means for rotating said conveying rotor means  
11            shaft means driven by said drive means and being connected to said  
12       conveying rotor means; and

13            shearing means in said chamber of said hollow conveying rotor  
14       means for generating heat by shearing said viscous fluid, said heat being  
15       transferred via said conveying rotor means to said tempering fluid in said channel  
16       means, said shearing means including at least one shearing plate element for  
17       cooperating with said rotor wall, means providing relative movement of said  
18       shearing plate in relation to said rotor wall; and

19            control means for controlling the magnitude of the relative  
20       movement between said at least one shearing plate element and said rotor wall.

21       11. Apparatus as claimed in claim 10, wherein said control  
22       means comprise electric control means.

1       12. Apparatus as claimed in claim 11, further comprising  
2       sensor means for sensing a temperature influence parameter, said sensor means  
3       providing an output signal.

1       13. Apparatus as claimed in claim 12, wherein said sensor  
2       means comprise at least two sensors so as to provide an output signal of each of  
3       it, and control means comprising a weighting control circuit for weighting said  
4       output signals.

1       14. Apparatus as claimed in claim 13, wherein said weighting  
2       control circuit comprises a neuronal network.

1       15. Apparatus as claimed in claim 10, wherein said control  
2       means comprises

3            electric control means providing at least one control signal, and  
4            electromagnetic means receiving said control signal for controlling  
5       the magnitude of the relative movement.

1                   16. Apparatus as claimed in claim 10, wherein said control  
2 means comprise braking means for braking said shearing plate element.

1                   17. Apparatus as claimed in claim 16, further comprising  
2 controllable coupling means interposed between said drive means and said shaft  
3 means, said control means controlling said coupling means.

1                   18. A viscous fluid type heat generating apparatus in a vehicle  
2 comprising:

3                   a vehicle driving arrangement for providing energy for said  
4 vehicle;

5                   housing means of said heat generating apparatus;

6                   channel means in said housing means for guiding a tempering fluid  
7 through them;

8                   conveying rotor means arranged at least partially in said channel  
9 means for driving said tempering fluid through said channel means, said  
10 conveying rotor means being hollow to form a chamber at least partially  
11 surrounded by a rotor wall of said conveyor rotor means for containing said  
12 viscous fluid;

13                  rotor drive means for rotating said conveying rotor means, said rotor  
14 drive means being coupled to said vehicle driving arrangement to receive energy  
15 from it;

16                  shaft means driven by said drive means and being connected to said  
17 conveying rotor means; and

18                  shearing means in said chamber of said hollow conveying rotor  
19 means for generating heat by shearing said viscous fluid, said heat being transferred  
20 via said conveying rotor means to said tempering fluid in said channel means.

1                   19. Apparatus as claimed in claim 18, wherein said channel  
2 means form a circle, said tempering fluid circulating through it.